

OUT OF THE EARTH

The Great Plaster Beds of Grand River Valley

HOW THEY ARE WORKED

History of the Industry From the Discovery of the Beds to the Present Time.

For traders and missionaries as far back as 1827 were cognizant of the fact that gypsum existed near the surface of the ground in the neighborhood of Plaster creek. An Indian chief by the name of Noonday had found a plaster rock, which he showed to Mr. McCoy, a teacher in the State mission, which stood near the point now indicated by the junction of West Bridge and South Front streets. Nothing was known at that time of its great extent and value, but in the year 1838 Dr. Douglas Houghton, the state geologist, who was sent here to select a point for sinking a well below the rapids, made a report that led to the development of the Grand Rapids plaster beds. The development and manufacture were begun in 1841 by Warren Granger and Daniel Ball, who erected a plaster mill on Plaster creek, two miles south of the city. The output of the mill the first week was forty tons, which was sold at the rate of \$4 per ton. Wheat, pork and other produce were received in exchange for it, the sales not being limited to cash customers. Mr. Ball soon sold his interest in the mill to Henry R. Williams, who did much to create a market for the article by his enthusiasm in making its merits known.

He conducted the mill several years, selling it in 1852 to E. B. Morgan and Noyes L. Avery who assumed the firm name of E. B. Morgan & Co. This mill stood on Plaster Creek near the present crossing of the Grandville road, and for several years was the only one there. It was a small establishment, but its success and the demand for its product showed the value of the gypsum deposit, and led to the establishment of their mills. For nearly thirty years, beginning with 1842, James A. Ramsey was connected with the mill as manager or in other capacities. During the winter of 1848-49 the demand for the plaster was greater than the supply, though the mill ran night and day to fill orders. Teams came from points 100 miles distant only to return empty in many cases. In January 1850 the mill was burned southward were sixty tons or more daily N. L. Avery & Co. purchased the works afterward, the members of the firm being Noyes L. Avery, Sarel Wood and Benjamin B. Church. In December 1851 this firm dissolved and was succeeded by Ramsey, Wood & Co. Ramsey Burton under the firm name of Sarel, Wood & Co. Shortly after Mr. Burton withdrew and was succeeded by Charles A. Todd and Abel Thompson.

The Florence Mills. About the year 1860 Freeman and Silas E. Godfrey began operating in gypsum and in 1864 they with Amos Rathbone and George H. White, under the name of G. H. White & Co., purchased the old plaster mill property and a large tract of land extending down to Grand river, along the line of Plaster creek. They erected a mill on the right bank of Grand river, near the mouth of the creek, and also made extensive additions to and alterations in the old mill building. The new mills were named the Florence mills, the firm being E. Godfrey & Brother. In a very short time this became an important manufacturing industry.

The first mill, together with 120 acres of land, has passed into the hands of the Albion company, of which M. B. Church is the general manager. Calcareous gypsum is produced, the same also being the product of the Godfrey mills. The old mill has gone out of use as a manufacturing establishment. This completes the early history of the plaster industry on the left bank of Grand river.

In the year 1849 Richard E. Butterworth opened the first gypsum quarry on the right bank of Grand river. He built a small mill about three miles below the city and carried on a successful manufacture of plaster until about 1856, when Hovey & Co. purchased the plant for \$35,000. About the year 1857 Butterworth discovered the gypsum deposits on the right bank of the river two other quarries were opened, one by Adin J. Hinde and the other by John Ball and Bernard Courtney.

Mr. Hinde's discovery. The manner in which Mr. Hinde located the gypsum deposits is worthy of note. While engaged in the work of sinking a salt well along Bridge street and the talk of the dip of the strata led him to make a search upon his farm later in life, resulting in the finding of a thirteen foot stratum.

Hovey & Co. organized in 1856 and built a mill a year later. They made about 1,000 tons the first year and the business steadily increased until 1860 when the Grand Rapids Plaster company was organized and the Eagle mills were erected. The firm comprised Francis Faxon, James W. Converse and Francis E. Fisher, all of Boston; Charles H. Stewart of New York and William A. Hovey. The officers were J. W. Converse, president; S. L. Whitney, vice president; C. C. Converse, secretary; William Hovey treasurer and general agent.

The plaster rock, accessible by the Eagle mill lies under the drift, and some thirty feet of rock, composed of alternating layers of water lime, clay, slate and gypsum. There are four layers of gypsum, the first one being only eight inches deep. The second layer is very thin, the third stratum is seven feet deep and the fourth stratum has a depth of thirteen feet. By the sinking of wells several strata of gypsum have been found below this, making in all about fifty feet of the rock. Tunneling and mining has been carried on extensively, and the mines now extend for several miles beneath the mills. Gypsum rock is a beautiful substance, showing every possible shade from white to a deep crimson color, and a vast lot of colors in between. On the left bank of the river the plaster rock lies but a few feet below the drift, appearing as surface rock as far as Grandville. It is very easily quarried, powder and other explosives being used to dislodge it.

An analysis made of the gypsum found at these mills shows the follow-

ing constituents: Water, 19 parts in 100; lime, 32.57; sulphuric acid, 44.44; organic matter, 3.89, with slight traces of sodium and potash. The gypsum strata, which outcrops near this city, undoubtedly underlies nearly the entire western peninsula of the state, and is therefore practically inexhaustible.

Stucco or calcined plaster was an early product of the industry. The first plastering and laying of brick chimneys with lime mortar was done in the house of Louis Campan, the house then standing at the corner of Monroe and Waterloo streets. James Clark did the work, and the lime used was made by William McCordland. It was burned in a kiln by the river bank near Huron street, and was the first burned here. It gave such satisfaction that Edward Godfrey, shortly afterward had his house plastered and a stucco finish put on the gable ends outside.

Calcining Gypsum. Mr. Clark brought to this city the art of calcining gypsum, a process which has cost thousands of dollars for those engaged in the plaster business. He took some of the rock, broke it into small bits with a hammer, and had it ground in an Indian corn mill. He then boiled it in a cauldron, when it became stucco fit for use. He placed it first in the form of mouldings about the circular windows in the gable of the Campan house. The stucco was so successful that it was used with better success, the mouldings remaining in place until the house burned in 1850. Five years previous to that time Daniel Prindle had started the industry of stucco flower pots. He also manufactured stucco vases and other pretty articles. The first cornice work on interior decoration was done on the old house which stood at the corner of Crescent avenue and Ottawa street by Philip Stewart in the year 1844. A new use for the virgin rock was found in building the Rathbone home on North Division street, and the fronts of several business blocks on Canal street were faced with it. It finished very handsomely the colors and veining standing out brightly it does not prove durable. Walls have been made of it, but the stone is too soft to wear well. The baptismal font in the chapel of St. Mark's church is constructed of gypsum and it is handsome as well as unique. Many of the old families retain souvenirs of the ornamental stage of the gypsum industry in the form of vases, goblets, paper weights, fruit dishes and other articles both useful and pretty.

The Stucco Trade. The stucco trade is an important one. Grand Rapids stucco is in demand in all the markets as a superior article. About the first shipments of plaster and stucco were made in 1850 over the Detroit & Milwaukee railroad. It was the coarse variety known as land plaster and was sold to farmers. The price was \$7.50 per ton and in Michigan and surrounding states it reached a large sale as a fertilizer. Up to the year 1880 the bulk of the output from Kent county was in land plaster, only a small per cent of calcined plaster or stucco being sent out. Now the proportions are reversed.

For more than a hundred years gypsum plaster has been used, as a fertilizer, having been introduced into this country by no less a personage than Benjamin Franklin. At first farmers were sceptical concerning its value as a fertilizer. In order to force conviction upon their minds Mr. Franklin devised a method, and it was so practical that there could be no escape from the proof that he adduced. In the presence of a number of them he sowed plaster on a portion of a field of grass on a hillside in the form of large letters spelling out the name of Franklin. Within a few weeks the grass upon which the plaster was sown had so far outgrown the rest that the letters could be easily read a long distance away. Of course there was no escape from so clever a demonstration.

Theory of the Fertilizer. Gypsum is a chemical compound of sulphur, lime, and the theory of chemists has been that as the winds pass over a surface sown with it, the ammonia, which has been exhaled from a thousand barnyards and hogs having a stronger affinity for sulphur than for lime, is attracted to the gypsum and combines with the sulphur, forming a sulphate of ammonia, which is a powerful stimulant to vegetable growth. Whether this theory be erroneous the result obtained is indisputable, and no farmer can afford not to use it. Straws, corn, wheat, and other crops which succeed it, but by the aid of plaster it will take up a far greater amount and thus add greatly to its fertilizing quality. Its beneficial effect upon corn, potatoes and fruit trees is well known.

Exchanged Wheat for Plaster. Years ago the farmer used to come to Kent county for plaster from their houses in Indiana, driving up with their teams loads of wheat and returning with their wagons loaded with plaster. In former times much plaster was shipped down the river by boat, whence it was taken by the lake steamer to different points. The railroads, however, have superseded the steamers in carrying the output from the gypsum deposits of Kent county. All of the mills are reached by rail, and cars are sent up to the mill floor and loaded. Some of the cars are loaded by boat, but the plaster men are anxious to avoid deep water transportation, when water rates may be secured.

Mr. Church's Discovery. One of the most important developments of the gypsum industry was the discovery in 1874 by M. B. Church that calcareous gypsum could be used as a wall coating. From a quarry near the Albion trade has grown to large proportions. Mr. Church secured patents on improvements in compound and in machinery, and the product met with success from the start. A recent improvement, which will soon be ready, allows the alabaster to be mixed with cold water as well as boiling water as heretofore. When the new process is introduced alabaster will control the wall coating trade of the United States. The gypsum manufacture is the making

of forty shades out of three, directions for the mixing being given on each package. The shades in use in alabaster wall coating are endless and it makes a beautiful finish.

Alabaster is made at the old plaster mill on the Grandville road, and the quantities are shipped daily. The price per carload is \$1200, while the cost per carload of ordinary plaster is only \$35. In 1884 a new alabaster mill was erected on the C. & W. M. road where it crosses Hall street, the object being to run in opposition to the Plaster Agency, but the Hall street mill is now in the association.

Alabaster is now being made in Canada and England, Mr. Church being interested in both institutions.

Uses of Calcined Plaster. Calcined plaster is coming into more general use every day. Calcined plaster is variously termed plaster of Paris or stucco, not from any difference in the make or grade, but in harmony with the notion of the locality. It is superceding lime mortar, forming a fine base for the decorative work. Another and important and increasing use to which calcined plaster is being put is in the manufacture of plate glass—the large glass such as is used for store fronts. It is used for a "bedding" upon which the glass is laid, and the glass is ground. The protective policy has largely stimulated the plate glass industry in this country and as a direct result local plaster men are greatly benefited by an increasing trade in calcined plaster. Plate glass is now being manufactured in large quantities at Louisville, Ky., Ellwood, New Albany, Kokomo, Ind., and at and in the vicinity of Pittsburgh, Pa. New plate glass factories are being erected in the vicinity last mentioned and New Albany capital is erecting a new plate glass factory at Alexandria, Ind. The duty on imported glass has been the direct cause of the establishment and increase of the industry. American capital and workmen in general, and Grand Rapids capital and workmen in particular, have been immediately benefited by it.

Manufacture of staff. Another use to which it is being put is in the manufacture of "staff," an article which is being freely used in the construction of the world's fair building, over 100,000 barrels of calcined plaster having already been used by one firm. Staff is a manufactured product, of which the principal ingredients are calcined plaster and fiber. It forms a dense hard substance, which is easily worked into blocks and slabs and these are stained in any shade desired in a clear, solid and strong. It makes a very handsome material, polishes well and is quite durable. Many of the buildings at the Paris exposition were largely constructed of staff. Staff also meets the requirements of another class of workers, being used in the construction of models. Its beauty and cheapness are strong points in its favor.

Grand Rapids plaster is of the best possible quality. The gypsum as it is mined shows many colors, but all shades are lost in calcining and the powder is a clear white, somewhat inclined to a blue tint. The blue tint is a point in its favor, as it yellows less easily than the pure white. It is fully equal in all respects to the celebrated Nova Scotia gypsum and in many particular it is superior. The best evidence of the superior quality of the Grand Rapids gypsum is its extensive use and the fact that wherever it comes into competition with any other it commands a better price.

HORSE MEAT.

It Is Not Very Palatable Even to a Hungry Soldier.

"You never ate horse flesh, I suppose?" said Lieut. Russell, of the Seventh United States cavalry, to a St. Louis Globe-Democrat man. "I have seen the time when I ate it with genuine relish, and that, too, without any salt. It was in 1877, during Gen. Miles' Nez Perce campaign. We had followed the renegades up the Missouri to its confluence with the Yellowstone, and the chase was so fast and exciting that we didn't realize how low our larder was getting until it was drained, and we were getting too far away from the base of supplies to replenish it. The game had all been driven out of the country ahead of us by the fleeing Indians, and when we finally caught up with the Redskins and forced them to fight we had almost nothing to eat for several days. We captured about seven hundred ponies, and the meat of them so round and sleek and fat as to appear to us the finest meat in the world. Our butchers killed the young ones and the fattest of the ponies that night after the battle, and as soon as they were skinned and dressed we had a feast that would have made Lucullus turn green with envy. We lived on this pony meat several days. It was cooked without salt and roasted over a spit, like a barbecued beef. The meat had a peculiar sweet taste, not at all palatable when I think of it now, and it was so fat that it would melt in your mouth. It was so good that it kept us from starving, and I therefore can heartily recommend pony meat to people in dire straits."

AUSTRIAN MARRIAGES.

The Queen Ceremony Attendant Upon a Foreign Alliance.

The quaint old Austrian custom of a bride being cast off, as it were, by her countrymen when she takes to herself a foreign husband, was an interesting feature at the recent marriage of Archduchess Louise of Tuscany. In describing the ceremony the Brooklyn Citizen says: "The archduchess entered the church followed by a long train of royal and noble Austrian ladies. They stood in a semicircle around her until the moment the bridegroom placed the ring upon her finger; then they turned and left her, for she was no longer a countrywoman of theirs. For a moment the princess stood alone—unattended; then a number of Saxon ladies ranged themselves behind her—she had become a Saxon. At the marriage of Marie Antoinette this custom, which in her case was observed only by the French court, had a pathetic denouement. When the Austrian ladies attempted to leave the new duchess of France she refused to be left and, as if foreseeing what her fate would be in her adopted country, clung to them and entreated them to take her back to Austria again. Actual force had to be used to separate her from her attendants."

Mr. Nelson Buckley will give her last appearance at his military affairs. No. 6 North Main street, Thursday and Friday, Oct. 5 and 6.

UP TO THE TIMES

The New Operating Room of the U. B. A. Home

TO BE THOROUGHLY EQUIPPED

With All Modern Surgical Appliances.

The Excellent Operating Room of St. Mark's Hospital.

For some time past the physicians and surgeons at the Union Benevolent Home and Hospital have been greatly handicapped for want of proper facilities for surgical and obstetrical work. The institution was designed primarily as a home for the aged and infirm, and as such lacked the requirements for the modern hospital. As a home it was admirably arranged, but as a hospital the defects were many and serious. In the first place there was no operating room, the room used as such being simply a small ward. There was no chance to isolate cases, as the room communicated closely with other wards and other rooms. The heating was imperfect and costly, the ventilation not what it might be, the elevator was small, old-fashioned hand-worked machine, and there were other defects. For some time past the hospital's work has been growing, and more and greater facilities for work were demanded. The subject was agitated by a few who had the growth of the hospital near at heart, and last spring it resulted in a plan for an annex. The promoters of the plan worked well and the money was raised before the work on the building began. The reform began with the basement, where five enormous boilers, running at a great expense, were providing heat. They had been immediately benefited by it.

Heating and Ventilation. It consists of one boiler, an engine and one of Huyatt & Smith's large fans. By means of the fan the air is blown over a coil of steam pipes. It is so arranged that the air which enters is cooled in summer and heated in winter, or all over or all under. It is a perfect ventilator as well as heater, and in the summer time it may be used to cool the air as the pipes can be filled with cold water and the ventilating fan will send a cool wave all along. It cools in summer and heats in winter and is perfectly adjustable. The heat can be regulated to any point between sixty and 100 degrees Fahrenheit or just as wanted in any particular room. The plant will soon be in position as work is being done.

The water closets and plumbing which were more or less defective all over the house, have been thoroughly overhauled and remodeled. A fine hydraulic power elevator will arrange the old one and it has been arranged for the basement, one of which will be a double door open to admit patients on a stretcher, up to the fourth story. With all these improvements it would seem that the building would be a model institution so far as sanitation is concerned, but more room is needed. To meet this want the new annex, 22x44 feet was planned and shown in the process of erection. It is hoped to have it completed so that possession may be had by the first of the year.

The New Annex.

The annex will be three stories high with a large, light, airy basement, ten feet to the ceiling. There will be three rooms in the basement, one of which will probably be occupied by the pathological laboratory. The other two will be used by the women of the hospital management. The first floor will be devoted to obstetrics and the three rooms on this floor will form an obstetrical ward. This will be a desirable arrangement, as it will keep the mothers and their crying offspring away from the other hospital inmates, affording them restful seclusion. Being somewhat isolated it can be kept clean and cool, and will be a perfect condition as possible. Communication with the main building will be by means of a narrow hall.

The triumph of the entire building and the pride of the surgical staff will be the two operating rooms, which will be located in the basement. The main operating room for abdominal surgery and all severe operations which are not suppurating will occupy the south half of the annex. It will have an outside exposure on three sides with three windows on each side and a large skylight overhead, so that plenty of light will come from every point. The modern germ theory teaches that all cracks and crevices are favorable for the support and continuation of disease germs which lodge therein and play hide-and-seek with the unhappy owner of a suppurating wound, and the convenience these little holes as much as possible no angles will be left in the walls whatever, but all will be softly rounded.

Everything Curved.

The base board will curve up from the floor and curve again to meet the ceiling, so that there will be no sharp angles and the door and window casings will present flat surfaces and curved lines. With a fine hard finished wall the room can be literally flooded with antiseptics and kept in the best possible condition. The floor will be of bright polished wood, though thoroughly impregnated with pitch, an antiseptic in itself, will be covered every week or two, or as often as needed, with a mixture of turpentine and paraffine. The floor will slant a little and at its lower edge proper connections will be made for the sewer through a trap, so that no escape of infection. There will be no sinks, water closets or other plumbing near this room, those necessities being located in connection with the new operating room. In short, this room will be made as sweet and clean as science can invent. Not even the case of implements will stand there, but will be brought from the other rooms as needed. The operating table will be one of the famous Morris-Elliott tables, made of plate glass and galvanized metal, mounted so that not a nail or a bolt is to be seen. The plates can be taken out to be cleaned and made thoroughly aseptic. The table is so arranged that water or other irrigating fluids may be poured over the patient and will run off into pans underneath the table, without even touching the patient's body, and the pans and the table can be easily

thrown into any possible position for operation. This room will be lighted by electricity.

Smaller Operating Room.

The smaller operating room, dubbed "the pin room," because suppurating cases will be operated upon there, will have all the advantages of the main room, water, apparatus for plaster casts, instruments, plumbing, etc. It will be constructed upon the same general principles as the larger room.

George W. Gay, Thomas D. Gilbert and Noyes L. Avery of the board of trustees, and Mrs. S. C. Graves, J. A. Pressey and F. A. Rutherford of the staff have been untiring in their efforts to enlarge the hospital and increase its facilities. The new annex will be a handsome addition to the main building, which it joins, being of the same style and material, and of substantial. Eleven new rooms are added, and the large amount of space formerly occupied by the boilers may now be used for necessary purposes. The room formerly used as an operating room will be used as a ward, the room being large enough for the purpose. The improvements and additions will cost from \$10,000 to \$15,000, but as has been stated, the money for the purpose has been raised. The hospital is well supplied with instruments and there is an available fund of respectable dimensions to meet any want in the near future.

Will Be a Fine Hospital.

When completed the U. B. A. will be one of the finest hospitals in the west and there is ample room on the lot for the erection of more buildings should it become necessary. Already the doctors and nurses are excited by the prospect of the isolation of contagious diseases such as diphtheria, scarlet fever, etc. South of the present building there is room for an additional building of the same dimensions as the original building and some day may see a handsome building rise on the lot. The present building is crowded much of the time and there is always plenty of work for the twenty nurses in the training school. This is the seventh year for this department which is recognized as the class in the city. Miss C. Borden is in charge and she is very efficient. Lectures will soon be resumed, the schedule having already been partially made out.

All good citizens desire to see the good work prosper. The future of the U. B. A. hospital is one which excites much interest. That the new improvements will result in the actual saving of life cannot be doubted and help extended to the suffering tends to humanize and make even strangers to him.

At present the staff consists of the following:

Management and Staff.

Board of Trustees—Charles Shepard, president; Thomas D. Gilbert, Noyes L. Avery, George W. Gay, John Hollister, J. H. Pughart, Clay H. Boddie, treasurer; Mesdames M. L. Withey, Anna Bessell, Harry Widdicombe, C. V. C. Shepard, Charles H. Stewart, J. A. Pressey, regular staff—President, Charles Shepard; vice president, F. A. Rutherford; secretary, Harry Joy.

Surgical Division—Consulting surgeon, J. B. Griswold; visiting surgeons, William Fuller, on duty December, March, June, September, and C. Graves on duty January, April, July, October; F. J. Groner, on duty February, May, August, November.

Medical Division—Consulting physicians, H. E. Locher, C. E. Patterson. Visiting Physicians—W. F. Hake, J. A. McArthur, H. E. Locher, C. E. Patterson. Obstetrical Division—Consulting obstetricians, J. O. Edie, C. M. Probst, Visiting Obstetricians—O. L. Dales, Bessie Earle, C. M. Kelley.

Gynecological Division—Consulting gynecologists, O. E. Erickson, J. A. De Vere, Visiting Gynecologists—F. A. Rutherford, A. S. Pressey, J. A. Patterson.

Eye, Ear, Nose and Throat Division—L. A. Fuller, D. M. Greene.

Dermatological Division—Consulting dermatologist, B. S. Zoube, on duty at the hospital, H. Whinery.

House Surgeon—H. M. Joy.

Principal of Training School—Miss C. Borden.

St. Mark's Hospital. When all the praises of the U. B. A. have been sung, the wayfarer need not believe that it is the only first-class institution for the poor in the city. It is in operation in this city. Rising grandly on the brow of Bridge street lies St. Mark's hospital, and the needs of surgery are well met in this institution, for it contains one of the finest operating rooms in the country. Even the most important condition required for the most successful operation is superior to it. Its particular advantages are its superior location, excellent light and fine floor, the latter making possible any amount of scrubbing, thus insuring perfect cleanliness, the most important condition required for the most successful operation is superior to it. Its particular advantages are its superior location, excellent light and fine floor, the latter making possible any amount of scrubbing, thus insuring perfect cleanliness, the most important condition required for the most successful operation is superior to it.

Would Like More Instruments.

It is well furnished, though the staff would like some additions to the surgical case. The range of instruments is complete for all ordinary cases, but the supply is not sufficient for all possible operations. Then, too, the wear and tear on surgical instruments is very great. Before each operation the instruments to be used are boiled to keep from infection.

Hot and cold water is supplied and gas heaters are in constant readiness. All water used is first filtered, then boiled to insure perfect purity. All pans, basins, buckets and articles of a similar use are made of blue agate, porcelain lined. There is a convenient arrangement for the use of a sterilizer apparatus for electrical treatment. Absorbent cotton and sterilized gauze are kept in closed glass receptacles ready for instant use. Sponges are kept in a carbolic solution in glass jars. For suturing wounds there are glass tubes containing silk of all sizes, from a fine filament to a coarse braid. A suture thread still is of silk worm gut. Cat gut is also used and is particularly valuable as being an animal substance. It is absorbed by the surrounding tissues after four days, doing away with the necessity of taking out the stitches after a wound is healed.

On the south side of the room are two most convenient closets filled up with drawers containing all necessary supplies. There may be found the tubes, bandages, gauze, cotton, oiled silk, rubber cloth, etc., and the towels and one article necessary at one

time or another. Ether and chloroform are there securely corked, waiting only to be sprinkled on the sponge to bring unconsciousness from pain.

Vials of Restoratives.

With the drugs which bring painless sleep are the little vials of restoratives should that slumber prove too deep. Even a pair of tongue forceps are not forgotten lest the patient "swallow his tongue" and die from suffocation.

Before the capital operation the surgeon and his assistants scrub their hands and forearms with antiseptic soap for ten minutes by the clock. Then there shall be no chance to splay the job a stiff brush is used. Then the members are plunged into a disinfectant solution, after which both nurse and doctors are ready for business. All the handles to the water receptacles, etc., are round with the disinfectant soap so that after the hands are prepared they may touch nothing unclean. The operating table, the stand whereon the attendant nurses place the surgical tools, are all made aseptic.

An immense amount of material is used in an operating room. The hospital's purchase came by the thousands and yards direct from the manufacturers and absorbent cotton is bought in hundred pound lots; yet it is replenished every few weeks. Hospital needs are imperative and must be met on the instant, when there is a surplus in the treasury or not. This explains why demands are so constant.

Staff and Managers.

Trustees—The Rev. Campbell Fair, president; E. Crofton Fox, treasurer; Edwin S. Morey, secretary; Willard Barnhart, Samuel Secor, George K. Johnson, Charles A. Hazeltine and Anton G. Hodepny.

Board of Managers—Mesdames C. H. Granger, E. D. Collins, P. R. L. Pierce, W. R. Shelby, Joseph Penny, A. J. Bowen, C. S. Hazeltine, J. Edward Ward, E. B. Borden, J. A. Pressey, Campbell Fair, S. P. Wornley, A. E. Worden, F. A. Gorham, F. Letellier, J. G. Macfarlane, J. J. O'Brien, A. G. Hodepny, F. A. Maynard, B. R. Pierce.

Staff—G. H. Johnson, president; S. R. Wooster, vice president; R. J. Kirkland, secretary.

Medicine, Visiting—C. H. Johnson, J. A. DeVore, Henry Kulst.

Consulting—Arthur Hazelwood, J. B. Griswold, J. Orton Edie, C. M. Probst, Benjamin Pyle.

Surgery—Visiting—Perry Schnitz, S. C. Graves, Hugo Lapinski.

Consulting—G. K. Johnson, John Brady, S. R. Wooster, W. H. De Camp, F. J. Groner.

Gynecology—Visiting—Eugene Boise, Emma Wany, Reuben Peterson. Consulting—Charles Shepard.

Eye, ear, nose and throat—Visiting—R. J. Kirkland, D. E. Welch, D. M. Greene.

Obstetrics and Pediatrics—Visiting—Bessie Earle, W. H. White, R. H. Spencer.

Consulting—F. A. Rutherford, T. D. Bradford, G. H. Miller, A. J. Pressey.

Pathologist—Hugo Lapinski.

A PROUD PRINCESS.

She Refused to Offer Any Token of Respect to the English Queen.

It is told of the beautiful Princess Ahmdee, of India, that when she was first brought to England she refused to allow herself to be presented to Queen Victoria, saying to the honor of her attendants, that the caste of her race forbade her to look upon her inferiors. It was only by persistent entreaties that the proud little beauty could be induced to obey the queen's summons to Windsor, and even when she did deign to confront her majesty nothing could induce her to offer the slightest token of respect for the sovereign of the people who had deposed the hereditary rulers of India. At first glance one might be surprised at the little resemblance of an Indian princess to the queen, for not in the features, of this charming queen of eastern royalty, Delhi, however, long since yielded to the forms of western civilization, and is to-day a thoroughly Europeanized city as a result of British rule.

Shah Jehan, in 1601, built the present city, close to the old Delhi, and made it the royal residence. The Mohammedans still call it Shahjahanabad, the "City of the King of the World." Nadir Shah, the Persian usurper, captured it in 1739, massacred thousands of the inhabitants and bore away plunder to the value of many millions of dollars, including the famous peacock throne and the great Koh-i-noor diamond, now in the possession of the British crown. The British first came into control in 1803, when the Marathas were defeated near Delhi by Lord Lake. When the sepoy mutiny broke out in 1857 Shah Mohammed Bahadur, then ninety years old, took command of the city, and until the English again triumphed enjoyed the imperial state to which he had long been a stranger.

BREAD FROM WOOD.

Reported Discovery of Renowned German Scientists.

Two years ago Victor Meyer, the eminent author and lecturer of Heidelberg, Germany, in a public address delivered before the students of the university at that place, said: "Chemistry is the great unraveled, the revealed, the hidden mysteries. * * * We may even reasonably hope that ere long it will teach us to make the fiber of wood a source of human food. The fiber of wood consists essentially of cellulose; can this be made into starch? If it can the food problem of the nation is forever solved. Starch has about the same percentage composition, etc., wherever found, but it differs very much in its properties, and the nature of its molecules has always been one of the greatest enigmas to the chemist. But a new era is dawning; we are beginning to read cellulose molecules like an open book, and I would not be at all surprised to hear that some scientist had manufactured a nice food from what was once the most purely elements."

The collaborators took the one and have industriously worked to prove the dreams of the master mind; and they have, if the popular scientific writers are to be relied upon, made corn starch from cellulose and bread from the "chemically pure" starch, which is said to be more nutritious than that made from either barley or rye. If this is all true to the letter, as we hope it is, the bread question will soon become one of secondary importance, for the supply will be practically inexhaustible.

FOR THE FAIR SEX

Telling a Woman's Character by Her Hair.

WOMAN'S OBJECT IN WEAVING

Sometimes It Is Sentiment and Sometimes to Achieve a Purpose—Woman's Sympathy for Woman.

And now they are saying that a close examination of a woman's hair will disclose her character. If the hair shows much care, is glossy, well kept with every pin in its place, you may rely upon it she is a lady born and bred. Her maid may have arranged it or her own deft hands may have fashioned the glossy locks into braids, matters not, the character shows. Gloss comes only from constant attention and the woman of innate refinement is the one who lingers over her toilet and bestows care on the extra touches. Coarse hair is said to show a coarse nature and humble birth. Fine, thin hair indicates a good disposition. Hair that splits on the ends shows a tendency in the owner to quarrel, bicker and enter into differences on all occasions. Black, glossy hair shows treachery; blonde hair shows vanity and weakness; red hair shows truthfulness, but a fiery temper, "dread" hair, common among the women of New England, shows a highly sensitive, nervous disposition. Thick, kinky hair also indicates coarseness, and smooth brown hair shows a calm, collected character, when paternity has gone out of date the study of the disposition by the close inspection of woman's glory is attaining the dignity of a fact, but there are several ways of telling the would-be student of human nature. The hair may be grizzled, or a woman's locks may be long, or it may be bleached, bronzed or dyed until most any color but the natural one appears. Strange as it may appear locally seems to have some influence on the growth of the hair. It is well known that many of the women of the northeastern states have thin hair with almost bald temples while southern women are noted for their thick, handsome locks, which in many instances reach their knees and often cover the shoulders. When a woman of the theory that only refined women have glossy hair it may be observed that Holland working women, fresh from plowing the fields of the old country, are blessed with glossy locks which are so smooth that they appear to be glued to the scalp.

It is said that women have more sensibility than men, and a decided tendency to irritability—not an altogether happy explanation. In the early life of the female portion of humanity courage was a notable characteristic, but tears were also at her command and she early learned their use. A good woman who weeps a woman weeps it is said to be hard to tell how many tears are due to suffering and how many flow because the will demands that they shall. Tears may often be ascribed to policy, a desire to attain some stated object, or carry a point. But when a woman weeps it is said to be hard to tell how many tears are due to suffering and how many flow because the will demands that they shall. Tears may often be ascribed to policy, a desire to attain some stated object, or carry a point. But when a woman weeps it is said to be hard to tell how many tears are due to suffering and how many flow because the will demands that they shall.

A recent writer says that the assertion that women are hard upon each other is almost without foundation. There are two classes of women who are prone to be severe in their judgment of their sisters. To the first belong the women of the world, the permanent and part to environment have never come face to face with a genuine temptation, and hence find it impossible to understand how another can yield to temptation. To the second class belong those who are good, who are kind, who are ever on the alert to discover weaknesses in others. Exponents of these two classes are found in all grades of society and in every community, but they are not the same. The world, the real world, is full of the first class women, women with pity and sympathy in their hearts for the entire sisterhood of women. They are ready at all times to rebuke the slanderer, nor will they at any time listen to petty, yet vicious, slanders. They are generous and forbearance toward the weak and erring, plead the cause of the oppressed gently, yet firmly. Never in the world's history have women's relations to woman been so cordial and pleasant as now